

WHAT IS CLAIMED IS:

1. An ankle brace flexion joint apparatus, comprising:
 - a proximal plate having an upper end and a lower end;
 - a distal plate connected to the proximal plate; and
 - a range limiting system, comprising:
 - 5 a tongue connected to the second end of the proximal plate;
 - two tongue-stops connected to the distal plate at a generally perpendicular orientation, wherein each of the tongue-stops includes a threaded hole through which a threaded rod is connected to the tongue-stops in threaded engagement.
2. The apparatus as claimed in Claim 1 further comprising:
 - a pin connecting the distal and proximal plates in pivotal arrangement;

a washer in mechanical engagement with the pin; and

a clip connected to the pin, the clip preventing the distal and proximal plates from
5 disassembling.

3. The apparatus as claimed in Claim 2 wherein the pin comprises:

a generally cylindrical base;

a cylindrical stem connected generally perpendicular to a center point of the
cylindrical base; and

5 a continuous trench on a circumference of the stem adjacent one end of the stem
opposite the cylindrical base.

4. The apparatus as claimed in Claim 3 wherein the clip is connected to the trench on
the stem of the pin.

5. The apparatus as claimed in Claim 1 further comprising a conduit located on the distal plate and partially surrounding each of the threaded rods.
6. The apparatus as claimed in Claim 1 further comprising ankle brace connection points located on the proximal and distal plates, each ankle brace connection point, comprising a generally circular-shaped base surrounding a hole.
7. The apparatus as claimed in Claim 1 wherein the proximal plate further comprises a distal plate connection point having a generally cylindrical depression with a hole located generally in the middle of the depression.
8. The apparatus as claimed in Claim 1 wherein the distal plate further comprises a proximal plate connection point having a generally cylindrical depression with a hole located generally in the middle of the depression.

9. A flexion joint apparatus, comprising:
- a proximal plate having a tongue protruding from an end of the proximal plate;
- a distal plate having a protrusion connected generally perpendicular to each side of the distal plate, wherein the tongue of the proximal plate overlaps a portion of the distal plate and travels a path along the distal plate, each end of the path terminating in a respective one of the protrusions; and
- 5 a pin connected through the proximal and distal plates.
10. A flexion joint apparatus, comprising:
- a body including a proximal plate having a tongue and distal plate having a protrusion on either side of the distal plate; and
- means for limiting the relative motion of the proximal plate with respect to the distal plate.
- 5

11. An ankle brace system, comprising:

an ankle brace;

a flexion joint apparatus connected to the ankle brace, the flexion control apparatus including:

5 a proximal plate having an upper end and a lower end;

a distal plate connected to the proximal plate; and

a range limiting system, comprising:

a tongue connected to the second end of the proximal plate;

10 two tongue-stops connected to the distal plate at a generally perpendicular orientation, wherein each of the tongue-stops includes a threaded hole through which a threaded rod is connected to the tongue-stops in threaded engagement.

12. A method of installing an ankle joint in an ankle brace, comprising:
 - pouring an ankle cast;
 - modifying the cast;
 - locating the ankle axis;
 - 5 square the cast with a flexion control ankle joint hinge apparatus;
 - vacuum forming plastic on the cast;
 - cooling the plastic; and
 - removing the brace.